



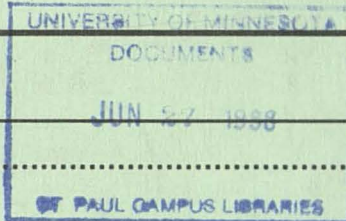
PLANT PEST Newsletter

MINNESOTA EXTENSION SERVICE

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ALFALFA

There have been no reports of insect problems in alfalfa this week. Regrowth after the first cut is poor in many areas due to the drought. In the driest areas, west and north of the Twin Cities, some alfalfa appears to have gone dormant, with no regrowth apparent at all.

Grasshoppers were reported to be coming out of CRP acres in Wright county, but they were not going into alfalfa at that time. In case they do, however, the threshold for grasshoppers in alfalfa is 8 per square yard, or treat field margins after cutting if more than 20 per square yard found in margins. See AG-BU-0500 for insecticide recommendations for grasshoppers in alfalfa.

-- Penny Ives, Extension Entomologist

CORN

CORN ROOTWORM—Surveys of some fields in southern and central Minnesota revealed larvae are second instars and actively damaging corn roots. Peak damage should occur within the next two weeks. Adult emergence will probably occur earlier than normal this year. Look for adult emergence beginning before mid-July.

—Ken Ostlie, Extension Entomologist

EUROPEAN CORN BORER—Adult counts in blacklight traps declined throughout southern Minnesota compared to the previous week. In contrast to previous years, the first flight was very synchronized as a result of the unseasonable warm temperatures. Because of these warm temperatures, larval development is also occurring very rapidly. Second instars have been observed in many fields with third instars expected very shortly. Preliminary reports indicate low shotholing levels and generally poor larval survival so far. But, shooting levels and survival are extremely variable between fields, areas of the state, and corn stages, making it very difficult to characterize the situation state wide. This is definitely a year for field scouting and those fields that were planted in late April with somewhat adequate moisture may have economic infestations. **DON'T HESITATE! SCOUT TALLER FIELDS NOW!** With the rapid development of the first generation, next week may be too late.

In central and northwest Minnesota trap captures remained generally low and did not increase dramatically over the previous week. The hot weather statewide has led to closer south to north synchrony than in previous years. This means that scouting and decision-making in central and northern Minnesota need to occur sooner than the timing we're used to historically.

The drought continues to have a strong influence on a treatment decision, affecting both projected corn prices and yield potential. Forecasting from ag economists gives some guidelines on prices: just in time rains regionally - \$1.80, probable price - \$2.20, stays very dry regionally - \$2.60. The yield potential of each field is being determined now and unfortunately is one of the most difficult variables to estimate under these uncertain weather conditions. Overall, the yield estimate is going to have the biggest influence. If rainfall is adequate at a particular location the number of borer equivalent to the break-even point will be lower. If the field is under severe drought stress, the break-even point will be higher. A 50% yield reduction will double the economic threshold and make it unlikely that treatment would be economical. The only way to make a decision is to factor your best guesses into the economic threshold formula.

—Ken Ostlie, Extension Entomologist

COLE CROPS

One of the most serious diseases of cole crops is **black rot** caused by the bacterium *Xanthomonas campestris*. This pathogen can cause severe losses in a relatively short time. Young seedlings that are infected with this disease soon yellow and die, where as more mature plants show symptoms as yellow - wedged - shaped areas at the leaf margin which expand toward the leaf center with affected areas turning brown and die. The bacterium soon becomes systemic in the plant followed by collapse of leaf tissue. The veins and veinlets darken and turn black as the disease advances, hence the name black rot. The vascular discoloration extends from the main stem to the upper leaves and down the root. In cabbage and cauliflower, the heads become discolored and plants become stunted, wilt and die. Disease symptoms can be observed 10-14 days after infection especially in warm, humid environmental conditions. Disease is spread mainly by splashing water. Control of black rot requires several methods, these methods include, 1) hot water seed treatment as the disease can be seedborne, 2) disease free transplants, 3) at least a 2 year rotation out of cole crops, 4) avoid spraying or cultivation when plants are still wet from dew, irrigation water or rain, 5) practice good insect and weed control and application of registered fungicide.

—Frank L. Pfleger, Extension Plant Pathologist

POTATO

COLORADO POTATO BEETLE—Colorado potato beetle hatch has begun. If larvae are present and egg hatch is more than 1/2 complete the first application may be justified. Where pyrethroid “failures” have occurred use either a phosphate (methyl parathion, Monitor, Guthion, Phosphamidon, etc.) or an aryl hydrocarbon (Thiodan) for this first application. I would use the alternate family of insecticides for the second application. Third application can be a pyrethroid. Our objective in all this is to remove, to the extent possible, pyrethroid selection pressure.

As dry as the season is we may see much reduced effectiveness of the soil systemic insecticides on dryland potato. This may dictate on additional foliar or two.

To date potato leafhopper (PLH) numbers are low. The severe drought has reduced alfalfa growth and may slow development of PLH as well as their movement to potato. The first surge of PLH to potato normally occurs about this time of the year.

—Dave Noetzel, Extension Entomologist

SMALL GRAIN

BARLEY THRIP—Barley thrip is again common in barley and wheat. Russ Severson, W. Polk county extension agent-Ag reports 6 + thrips (adults and nymphs) per plant in the Crookston-Beltrami area. I have not seen severe damage as occurred 2 years ago but both leaf and sheath abrasion is everywhere.

—Dave Noetzel, Extension Entomologist

SMALL GRAIN, SUGAR BEET, SOYBEAN, SUNFLOWER

GRASSHOPPERS—Calls continue to come in about grasshoppers in non-cropland (e.g., roadsides, prairie, CRP, etc.) Such sites need to be on the label for the compound to be used. We had reports this week of Lorsban being applied to roadsides. To our knowledge this is not a labeled use as Lorsban is not labeled for *non-cropland* use. Along the same lines when one sprays roadsides by air all adjacent crops and sites should also be on the label of the pesticide you use as it is impossible to keep the active ingredient totally on the roadsides.

Incidentally roadside spraying by air is extremely effective using proper insecticide, etc. This is an acceptable strategy when all roadsides have high grasshopper numbers. Ardell Knudsvig, Minnesota Department of Agriculture Survey entomologist and Carlyle Holen, area pest management in Crookston report quite variable grasshopper numbers in their area however. I hesitate recommending spraying miles of roadsides in such a circumstance. Again use good judgement in what chemicals you use and how you use them. Retreatment of roadsides, if treated, now is unlikely.

Those who have cropland next to CRP or other permanent grass should continue to monitor field margins. There is a wide range in grasshopper size due to species difference and different hatch times. Thus some risk to crops may continue for at least another week or so.

-- Dave Noetzel, Extension Entomologist

TOMATOES

There are several important diseases that affect tomatoes, two of which include the fungal disease early blight and *Septoria lycopersici* respectively. Symptoms caused by the early blight fungus appear as dark brown spots on the leaves with dark, concentric rings. Usually the oldest leaves are affected first. Infected leaves usually die and drop prematurely, resulting in

TOMATOES/Continued

early defoliation, fruit sun scald and poor fruit color. The fungus overwinters on diseased plant debris where it can survive for at least one year. Disease development occurs over a wide range of temperatures and is favored by heavy dews, irrigation and/or rainfall. Disease control should be given when the first cluster of fruit develops. For control information see Extension Publication AG-FO-1882.

Septoria leaf blight can be very destructive to tomatoes. Symptoms on the leaves appear as numerous small gray circular spots with dark borders. Small black structures can be seen within the gray circular areas and house the spores which spread to other plants. The pathogen can survive in infected plant debris, therefore, a 2 year rotation is advised. Wet warm weather favors the spread and development of this disease. Like early blight, control of *Septoria* must begin at the first cluster of fruit development. This disease is generally more difficult to control than early blight.

—Frank L. Pfleger, Extension Plant Pathologist

VEGETABLES

CUCURBITS-CUCUMBER BEETLE—Cucumber beetles averaged over 2 per blossom on melons and 4 per plant on squash in some Twin City locations. These numbers appear higher than in 1987.

CRUCIFERS-CABBAGEWORM AND LOOPER—Imported cabbageworm have been active and controls applied the past month. We observed loopers this past week as well. Early transplants of broccoli are being harvested.

GREEN BEANS-BEAN LEAF BEETLE—Severe defoliation due to adult bean leaf beetle feeding was observed in the St. Paul area the week of June 6th. Defoliation was estimated to exceed 30%.

—Dave Noetzel, Extension Entomologist

CUCURBITS—Anthracnose is an important disease of cucurbits (especially cucumbers, muskmelon and watermelon). This disease is caused by the fungus *Colletotrichum lagenarium*. Initial symptoms on the leaves of muskmelon and cucumber appear as yellowish or water-soaked spots that rapidly enlarge, turn brown, and shatter to form a ragged hole. The diseased areas on the leaf coalesce resulting in brownish leaf blight which may involve most of the leaf. The disease symptoms are quite different on watermelon. On this host, the leaf spots are elongated, black and can be observed on the petioles and stems. Symptoms of the fruit of all cucurbits that are susceptible to this disease include numerous small, sunken spots with dark borders. Small, black fungal structures are found in the centers of the sunken spots; spores are found within these structures and serve as a source of spread of the disease. The fungus can overwinter in old, diseased plant debris and is spread mainly by splashing water. See Extension publication AG-FO-1884 for more information on control.

—Frank L. Pfleger, Extension Plant Pathologist

MISCELLANEOUS

ARE HERBICIDES RESPONSIBLE FOR ROOTLESS CORN?—We have received a number of reports recently on corn that is not developing normal nodal and brace roots. These abnormal roots are short and swollen and fail to elongate and enter the soil. This often results in a great number of lodged corn plants.

Often the question is asked if herbicides are responsible for this phenomenon. Carryover of dinitroaniline herbicides (for example, Treflan, Sonalan, or Prowl) from the year before may produce symptoms similar to those described above, except the entire root system would generally show signs of thickening and stunting. Banvel and 2,4-D, applied postemergence, could also affect corn root development. However, in a number of cases these herbicide possibilities were eliminated. The primary cause of this situation is adverse environmental conditions. Corn planted into loose or “fluffy” soil that becomes packed by

Hard rains soon after corn emergence can develop nodal roots that are initiated above or near the soil surface. When the rains are followed by hot, dry, and windy conditions, the soil surface can dry out and the roots can fail to develop properly.

There is little that can be done to relieve his problem. Cultivation which places soil into the row may brace up affected plants. However, the cultivation must be done carefully and cannot be done on cloddy soils, as more plants may be knocked over or dislodged than are helped. Recent rains and a moderation of temperatures will do the most to alleviate this problem.

—Jeffrey L. Gunsolus, Extension Agronomist-Weed Control

BLACKLIGHT TRAP CAPTURES—The following table summarizes the captures made last week. June 8-14, 1988.

District	Location	Nightly captured			
		European corn borer		Armyworm	
		Average	High	Average	High
NW	Crookston	3	16	6	15
WC	Fergus Falls	5	11	7	9
C	Ollvia	14	33	3	8
EC	Scandia	30	48	3	9
SW	Worthington	17	19	6	9
C	Glencoe	5	11	6	11
SC	Brown	19	35	1	3
SC	LeSueur	30	95	6	10
SC	Blue Earth	26	105	1	6
SC	Waseca	10	21	-	-
SC	Clarks Grove	19	35	3	6
SC	Caledonia	66	413	3	8
SW	Lamberton Expt. Stn.	7	18	T	1
SE	Randolph	13	39	T	1
SE	Mieszille	36	134	6	14

—Ken Ostlie, Extension Entomologist

DIAL U HIGHLIGHTS—Week of June 5-11, 1988

Fertilizing lawns—People are concerned about fertilizing lawns in this weather--particularly if they've contracted with a lawn service. Dormant grass won't be harmed, OR helped. Actively growing, well-watered lawns should not be harmed, either. Moisture-stressed lawns that are not yet dormant are most vulnerable to severe fertilizer burn, and should not be fertilized until cooler, wetter conditions prevail, probably late August or September.

Boxelder bugs—We have been receiving an increasing number of boxelder bug calls from people who find accumulations of them on the outside of buildings. They are not attempting to enter into homes but appear to be primarily interested in just mating. That is not typical behavior for them and could be related to the drought conditions. We are also finding that some females are laying their eggs on and around buildings resulting in large numbers of red nymphs. Possibly this is a result of poorer quality of seeds from the lack of moisture or possibly a result of overpopulation in the trees. The nymphs that hatch should not live long without food. See AG-FS-0998, Boxelder Bugs.

DISEASES??? Diseases caused by fungi and bacteria are in the minority this year. Most of the damage occurring to turf and ornamentals is caused by adverse environmental conditions. Some diseases are made worse by dry weather conditions. These include verticillium wilt and the canker diseases.

Poison ivy is a problem, as it is every year. Many products are effective in killing it, now that leaves are fully expanded,

DIAL U HIGHLIGHTS—Continued

but they must be applied directly to the individual plants rather than sprayed indiscriminately. Glyphosate (Round-Up), ammonium sulfamate (Ammate) and amitrole (Amitrol-T) will each do a good job, but will kill surrounding vegetation, along with the poison ivy. Spray only when it's not windy, and when temps are no higher than the mid-80's.

Aphid enemies—With the large numbers of aphids present this year ladybird beetle adults and larvae have been common. The adults are easy to recognize but the larvae may not be. The immature forms are alligator-like and often bluish and orange in color. Spraying the aphids with an insecticide will also kill the predators and parasites. If large numbers of aphid enemies are present, they can be preserved by hosing the aphids off with water. This dislodges and kills the aphid. Other natural enemies of aphids include green lacewing adults and larvae, hover fly larvae and aphid parasites.

Watering lawns—We're getting many calls on watering lawns still. Due to limited water supplies, letting established lawns go dormant is probably the best idea. New sod (this spring) and newly seeded lawns should be watered regularly, though, or they're not too likely to survive.

Other common calls include birch leafminer damage and carpenter ants.

Deborah Brown
Horticulture

Jeffrey Hahn
Entomology

Cynthia Ash
Plant Pathology

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